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Tips for Clinical Problem Solving

The main objectives of clinical problem solving (CPS) conferences are for the facilitator to highlight the intricacies of the diagnostic process and to teach medicine across a broad range of topics with the audience actively engaged in solving the case throughout the presentation. This is different from a clinicopathological conference where the entire case is presented and the audience is then asked to provide a diagnosis. By simultaneously engaging the audience in the diagnostic process, the attendees achieve much more than just the final diagnosis. Authors at the University of California at San Francisco have provided a 12-step guide to select, prepare, and deliver a CPS to maximize its educational effectiveness:

1. Picking the Case: Pick well-suited cases that force clinicians to revise and explain their working hypotheses, including evolving stories that draw on broad differential diagnoses.

2. Use Artistic License: A balance needs to be achieved between information that makes the case realistic and challenging and excluding details of day-to-day care that can be distracting and potentially unfair, having nothing to do with the final diagnosis.

3. Time Management: Cases should be 20 minutes to an hour, providing time for discussion, questions, and concluding remarks.

4. Avoid Premature Closure: Do not include clinical information on the initial slide. All that is necessary is the title "clinical problem solving" and the identifying information of the discussant.

5. Start Simple: The first case slide should be a succinct statement about the patient with the chief complaint and demographic or clinical information.

6. Present Data as an "Infusion," not a "Bolus:" A discussion break should follow every two to four slides of clinical data.

7. Mind the Gap: A blank slide can serve as a buffer to prevent inadvertent divulgence of subsequent information compromising the analysis of the previous slide's data.

8. Keep the Didactics Short: While a brief didactic session at the end of the presentation can promote additional understanding of the case or diagnosis, audiences learn more if two or three slides at the conclusion include three key points.

9. Find a Peer Reviewer: It is easy for a presenter to understand the difficulty of a case. Having an experienced clinician review the presentation before it is presented can avert errors in content and organization.

10. Keep it Real: Just give the facts without any interpretation. Do not fabricate a response based on what the presenter expects it to have been.

11. The Postscript: The audience should comment on the diagnosis and its thought process after the diagnosis is revealed. The value of the exercise lies in the process that took place before the diagnosis was revealed rather than on the diagnosis itself.

12. Increase Interactivity: An audience response system where questions are posed to the attendees at multiple junctures during the case is effective and enjoyable to increase interactivity.

The CPS incorporates core principles of adult learning, repeatedly challenging learners across multiple problems and highlighting professional reasoning as well as relieving the tedium that often accompanies lectures.

(Dhaliwal G, Sharpe BA. Twelve tips for presenting a clinical problem solving exercise. Medical Teacher. 31:1056-1059,2009.)

Electronic Health Records and Medical Students

The University of Illinois at Chicago College of Medicine tested 190 fourth-year medical students to determine if they were prepared adequately to diagnose and treat patients while using an electronic health record (EHR). The study was performed at the Clinical Performance Center of the medical school where simulation-based instruction and testing is done using either mannequins or professional actors. None of the students previously had participated in a formal class in the use of the EHR.

The study employed a professional actor who played the role of a cancer patient hospitalized with complications resulting from chemotherapy. Two skills were tested related to the use of EHR, including whether they found crucial information about the patient from within the EHR and whether they were able to analyze the EHR without alienating the patient. It was determined that the school needed to incorporate training in EHR skills into the curriculum.

They were not able to read and enter information into an EHR without ignoring the patient, and the majority of students were also not able to find the information they needed. The director of the Clinical Performance Center, Rachel Yodkowsky, remarked that with the EHR you can almost think of the doctor, the patient, and the record as being a triad or like having three people in the room.

(Wilson L. Med students not ready to use EHRs: study. Modern Healthcare. January 26, 2010.)

Comparing D.O./ M.D. Schools and Accreditation Standards

The Liaison Committee on Medical Education, which accredits M.D. schools, indicates that LCME-accredited schools require a number of standards it claims are not required by the Commission on Osteopathic College Accreditation (COCA). Among those required by the LCME are

- presence of research activities at the institutional level
- opportunities for students to engage in those activities
- curriculum related to the basic principles of clinical and translational research
- how such research is conducted, evaluated, explained to patients, and applied to patient care
- systems of career advising

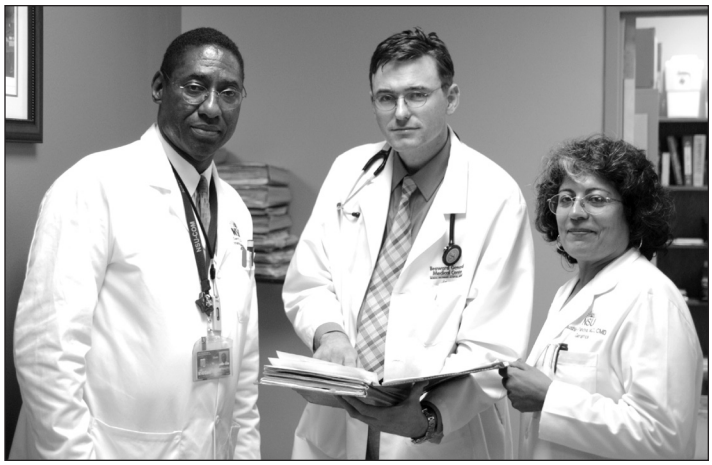
The LCME claims that none of these areas are addressed in COCA standards. COCA, the LCME states, addresses diversity standards in the terminology of antidiscrimination while the LCME requires the development of activities that enhance diversity among faculty, staff, and students with reference to collective responsibility for diversity of the profession. In addition, LCME standards, it claims, require a component of the training of medical students to be in the presence of resident physicians, but COCA does not, according to the LCME.

Furthermore, the LCME also indicates it requires programs to identify the types of patients, clinical conditions, and the setting and level of student involvement that faculty members deem necessary for students to meet educational objectives across different clinical sites. With regard to the quality of D.O. and M.D. program graduates, the LCME states that to make that comparison would require definition of quality and the characteristics of entering students as well as how they perform in residency.

COCA responded to the LCME assessment of accreditation standards for M.D. compared to D.O. schools. COCA remarked that there are certain COCA standards that are not found in LCME standards that may enhance quality. It was suggested that *Academic Medicine* consider a lengthy article that would assess the standards of both accrediting bodies and how they may affect quality. It was then concluded by COCA that having looked at theses issues raises awareness of the quality issue in medical education as well as the importance of constant assessment of accreditation standards.

(Hunt D, Brzansky B, Sabilis R, Wood Dl, Hahn MB. Accreditation standards of D.O.- and M.D.-granting medical schools: an incomplete comparison. Academic Medicine, 85:3-4; 2010.)

Critical Issue: Fixing the Doctor Shortage



Darrell G. Kirch, M.D., president of the Association of American Medical Colleges, urges the public and Congress to lift the freeze that currently exists on the support of medical training. He emphasizes that Americans need to be ensured that they are cared for by more than an insurance card and an answering machine. Unless the government lifts the cap on residency training positions it pays for as a result of the Balanced Budget Act in 1997, even though medical schools are aiming to increase class size by 30 percent, the nation's overall supply of physicians will not be increased.

In the next 15 years, a shortage of more than 125,000 physicians is being estimated. In 2010, there already is a gap of at least 16,000 primary care physicians. The percentage of primary care physicians is lower in the United States than in most of the developed countries. Even though the number of these physicians doubled between 1985 and 2004, there is still a shortage of those physicians who practice primary care. New patients wait an average of eight days to see primary care physicians, and the overall waiting time to see all physicians in 2004 was 15 days.

If more physicians are not produced, these delays will become greater. Even without an expansion of health insurance, according to the Department of Health and Human Services, demand for physician services will increase by 22 percent between 2005 and 2020. Yet primary care physicians will only increase by 18 percent during that period.

(Kirch DG. How to fix the doctor shortage. The Wall Street Journal. January 4, 2010.)

An Enlightening Look at Patient Safety and the Medical School Curriculum

The Institute for Healthcare Improvement found in a survey of 391 medical students that four out of five of them felt their exposure to patient safety and quality improvement was fair at best. A 2008 survey by the Liaison Committee on Medical Education, which accredits U.S. allopathic medical schools, indicated that two-thirds of medical schools mentioned patient safety in a required course, with an average of two sessions.

There still is a debate about how to teach patient safety and quality improvement, according to David Davis, senior director for continuing education and performance improvement at the Association of American Medical Colleges. Some medical schools invited parents of children who were injured or killed due to medical error to talk with medical students.

A three-week course for fourth-year medical students at the University of Pennsylvania on patient safety is conducted at the Wharton School of Business using models of product reliability in industry and learning how that can be applied to health care. In the fall of 2008, the Institute for Healthcare Improvement began a new Open School for Health Professions, which provides free online courses, case studies, and discussions addressing medical errors and other quality improvement topics. More than 20,000 students from 173 school/hospital-based chapters in 41 states and 24 countries have registered. This suggests a need for changing the culture and removing the secrecy surrounding medical errors so students and practicing physicians will openly talk about their errors and those of their colleagues.

A study by third-year Harvard Medical School students revealed that most of them had witnessed errors by peers or superiors or themselves but were ignorant of what to do about them.

(Blumenthal D, Ganguli I. Patient Safety: Conversation to Curriculum. New York Times. January 26, 2010. (The authors are fourth-year Harvard Medical School students.)

Business School Training for Physicians

Richard Bohmer, who is a New Zealand-trained physician as well as the co-director of the Harvard M.D.-M.B.A. program and faculty chair of the business school's Managing Health Care Delivery executive education program, remarked that you have to know something about medicine to teach management science to doctors and nurses. Management skills, he indicated, help people take control over the systems that deliver care to patients. He believes that by learning management, it is possible to show health professionals how the health care system is designed and how it functions. Dr. Bohmer further states that the redesign of health care, which has been preoccupied with funding and reimbursement strategies, needs to focus more on how the care itself is managed.

The Harvard Business School Managing Health Care Delivery program is a non-degree curriculum that has 68 students in a course spread out over nine months consisting of three one-week courses costing $22,000. It is designed for participants to think critically about ways to improve day-to-day processes. In order to acquire guidance, those in the course study industries outside health care such as other high-risk science-based fields like aerospace. One of the students enrolled in the program remarked that those who are leaders in medicine have not taken the management side as seriously as they should. The medical director of the Roswell Park Cancer Institute in Buffalo, New York, is quoted as saying, "We are coming to grips now with the fact that we are much more similar to other businesses than we are different."

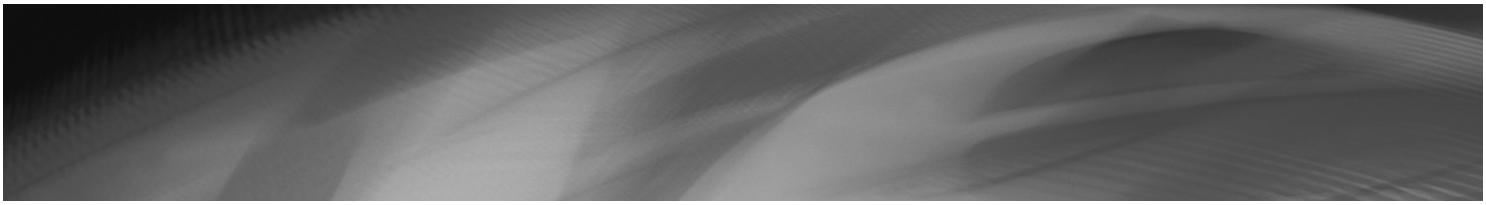
(Porter, J. Doctors seek aid from business schools. The Wall Street Journal. B8. December 17, 2009.)

Specialty Choice by Students Entering People- or Technique-Oriented Careers

A study at a single Midwestern medical school, which included 356 fourth-year medical students almost evenly divided by males and females, found that 146 entered technique-oriented specialties and 210 entered person-oriented specialties upon graduation. The study tried to determine information about what influenced them on the medical specialty they selected. Examined was the influence of faculty, curriculum, student services, lifestyle considerations, mentoring and professional development programs, family/friends, and other factors.

The specialties defined as person-oriented were family practice, internal medicine, obstetrics and gynecology, pediatrics, physical medicine and rehabilitation, and psychiatry. Technique-oriented specialties were anesthesiology, dermatology, emergency medicine, otolaryngology, pathology, radiology, and surgery. The study was conducted over five years with a response rate that varied from 64 to 72 percent and included 15 items. The survey indicated that students seeking person-oriented specialties were more likely to be influenced by individuals such as faculty members and a personal physician as well as their medical school experience, including school activities, school offices, and services. Those students seeking technique-oriented specialties were more likely to be influenced by prospects for high income.

(Borges NJ, Manual RS, Duffy RD, Fedyha D, Jones BJ. Influences on specialty choice for students entering person-oriented and technique-oriented specialties. Medical Teacher. 31:1086-1088.)



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